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REPORT OF THE PINE BEETLE SURVEY OF 1944

on the

UMATILLA NATIONAL FOREST

by

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Scientific Aid

Forest Insect Laboratory
Portland 5, Oregon
December 6, 1944

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U. S. Department of Agriculture
Bureau of Entomology and Plant Quarantine
Forest Insect Investigations

REPORT OF THE PINE BEETLE SURVEY OF 1944

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UMATILLA NATIONAL FOREST

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December 8, 1944

REPORT OF THE PINE BEETLE SURVEY OF 1944
on the
UMATILLA NATIONAL FOREST

The ninth annual pine beetle survey of the Umatilla National Forest was conducted during the periods September 1 to 13 and 20 to 28, inclusive. All field work was done by a two-man crew consisting of R. L. Furniss and W. J. Buckhorn of the Bureau of Entomology and Plant Quarantine. Cooperative funds were contributed by the Forest Service which also provided living quarters and subsistence supplies for the field crew.

Coverage was limited to the virgin ponderosa pine stands on and adjacent to that portion of the forest lying westerly from Ukiah. The survey consisted of: (1) a 100 percent cruise of all insect-caused losses that had become evident since the last survey on three 320-acre check plots, and (2) an extensive reconnaissance of the uncut stands in general. Both phases were carried out in conjunction with an insect hazard appraisal study, results of which will be reported upon separately. Reconnaissance was unusually intensive because practically all roads within the ponderosa pine stands of the area were traversed in order to obtain data on insect hazard. Plot data for 1943 and 1944 and area estimates for 1943 are summarized in the accompanying tables.

Losses on Plots - 1943.

Pine mortality on the plots during 1943 continued the downward trend begun in 1939. Losses averaged 25 board feet per acre or .25 percent of the stand, a decline of 37 percent below the loss figures for 1942.

Losses on Plots - 1944.

On the average, 61 percent or less of the total seasonal loss would be evident at the time of year when the 1944 survey was made. Computed total losses for 1944, including an estimate of unmarked trees, indicate a sharp upturn of infestation. Losses on the plots are estimated at 81 board feet per acre or .79 percent of the stand, an increase of 220 percent above the loss in 1943.

General Infestation - 1943 and 1944.

In 1943 pine beetle infestation was well below normal at moderate to high elevations; whereas, at low elevations, particularly in the fringe type, infestation was normal to slightly above. A general increase occurred in 1944. This increase was especially noticeable near Dixon Guard Station, around Wilson Prairie, in lower Fivemile Creek drainage, and along Camas Creek south from Ukiah to the forest boundary. Although no direct control measures are warranted at present, the extent of losses, past, present and prospective, on the four areas mentioned are such that timber values are being depleted to a marked degree. Depletion and threatened loss are most noticeable in the vicinity of Dixon Guard Station and around Wilson Prairie in both of which places the need for some form of utilization or salvage cut is conspicuous.

Characteristics of 1944 Infestation.

The upward surge of infestation in 1944 is presumed to have been influenced by drought conditions which developed during the latter part of 1943 and continued unabated in 1944. Effects of this drought upon pine growth were apparent from the abnormally short needles and leaders and the very narrow annual ring for the growing season of 1944. Many high risk trees also took a turn for the worse. That the western pine beetle found host conditions more favorable for development was indicated by the heavy "pure" broods of this insect in 1944 as compared with the weak broods and mixed occurrence with other species during 1942 and 1943.

Other Insect Conditions.

Ips oregoni (Eich.) - Group killing of ponderosa pine reproduction on the slopes west and southwest of Ukiah apparently started in 1942 or 1943 as a result of a buildup of I. oregoni in slash in nearby logging operations. Large groups of reproduction and poles were killed in 1944 and in addition there was considerable top-killing of mature trees. Many of the top-killed trees, which in some instances were in groups of 10 or more, were later attacked and killed by the western pine beetle. So far the only serious aspect of this Ips outbreak is that it has provided highly favorable host material for development of the western pine beetle. In all likelihood the outbreak will subside when logging operations in the vicinity are completed.

Archips fumiferana (Clem.) - During the course of the 1944 survey, a moderate amount of feeding by the spruce budworm was observed on much of the Hoppner Ranger District. Both white fir and Douglas-fir had been fed upon, but in no case had any appreciable damage been done.

Dying Fir - Heavy mortality of white fir and Douglas-fir, especially at the lower elevations, occurred during the past season. Groups of four or five trees were common and one group of 17 trees was observed. This loss in 1944 is probably higher than for any season since 1938.

Table 1. Ponderosa pine killed by bark beetles on virgin check plots.
Umatilla National Forest.

Area and Plot	Plot Description					1943 Loss					1944 Loss					
	T	R	Sec.	Pine Timber Acres	Pine Volume B.M.	No. trees	Volume B.M.	BM per Acre	% of Stand	Ratio to 1942	Trees actually Marked	Est. of Probable Total for Season No. trees	Volume B.M.	BM per acre	% of stand	Ratio to 1943
Fossil																
Stelling Bu.	8S	26E	5 ½	235	1,924,330	5	5,080	22	.26	.64	7	12	15,750	67	.82	3.10
Wilson Pr.	6S	26E	33 ½	285	3,459,050	14	11,980	42	.35	.78	31	52	38,600	135	1.12	3.22
Tupper	6S	27E	16 ½	210	2,180,530	4	1,520	7	.07	.24	7	12	5,100	24	.23	3.35
Area Total - 3 Plots				730	7,563,910	23	18,580	25	.25	.63	45	76	59,450	81	.79	3.20

Table 2. Estimated Insect-Caused Ponderosa Pine Losses, Season of 1943.

Areas and Units	Virgin Ponderosa pine Acreage	Pine Volume M.B.M.	Estimated number of Trees	Volume M.B.M.	No. of Trees per Section	Board feet per acre	Percent of stand
Pendleton							
Gurdane	19,450	185,200	410	185	13	10	.10
Rhea Creek	19,670	164,430	511	230	17	12	.14
Area Total	39,120	349,630	921	415	15	11	.12
Dale							
Ellis	107,930	717,740	1525	870	9	8	.12
Fossil							
Hardman	46,990	407,500	1830	1100	25	23	.27
Ball Creek	109,250	654,710	2180	1310	13	12	.20
Kinzua	49,710	578,330	2900	1500	32	30	.26
Area Total	205,950	1,640,620	6510	3910	20	19	.24
GRAND TOTAL	353,000	2,707,990	8956	5195	16	15	.19